

COHEN (SOL SOLIS)

Guaiacol x x x x x







*Cohen (Sol. Solis)*

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Compliments of  
Dr. Solomon Solis-Cohen  
279 South 17th Street,  
PHILADELPHIA.

## GUAIACOL, TOPICALLY, AS A PROPHYLACTIC AGAINST DIPHTHERIA.

BY SOLOMON SOLIS-COHEN, M.D.,

Professor of Clinical Medicine and Therapeutics in the Philadelphia Polyclinic, Physician to the Philadelphia and Rush Hospitals, Consulting Laryngologist to the Pennsylvania Training School for Feeble-Minded Children, etc.

AN epidemic of diphtheria made its appearance at the Pennsylvania Institution for Feeble-Minded Children at Elwyn, Pa., during 1894, beginning August 29th and ending November 28th. The cases occurred in two buildings; in the main building from August 29th to September 15th; in the building known as "The Manse" from October 12th to November 28th.

The disease was undoubtedly introduced by some child who had been home on a vacation or by visiting friends, the main building being open at all times for inspection. It was supposed to have been carried from the main building to the manse by a careless attendant. Dr. Abbott, who made an examination of the buildings on November 10th, 1894, found the sanitary condition of both buildings to be good.

The cases which occurred in the main building were light and developed in the following order: August 29th, 1 case; August 31st, 1 case; September 3d, 1 case; September 6th, 1 case; September 10th, 1 case; September 15th, 1 case. After September 15th no new case developed in the main building.

In the manse the first case was noticed on October 12th. The child was immediately isolated. The cases in the manse developed thereafter in the following order: October 14th, 1 case; October 17th, 3 cases; October 18th, 1 case; October 19th, 1 case; October 22d, 1 case; October 23d, 1 case; October 24th,

1 case; October 25th, 1 case; October 29th, 2 cases; October 30th, 1 case; November 2d, 1 case. There was then an interval from that date to November 27th without a case. In the morning of November 27th, on the second floor, a floor not previously involved, a case was found. The next morning on the third floor a case was found. Since then there has been no other case.

The use of guaiacol as a prophylactic dates from November 9th, during the time the epidemic was in progress in the manse.

The following particulars are believed to be of interest: The building is of brick, is situated on the brow of a hill, and is 200 feet from the nearest of the other buildings. It has four floors. The first floor is used as a basement, the second floor being occupied by day rooms and dormitories, the third floor by day rooms and dormitories, the fourth floor by drying room, school rooms and sleeping apartments for the attendants. It is occupied by 134 children. The sick children were taken to an isolation ward, a building situated about 600 or 700 feet from the nearest of the other buildings, and with the exception of the physician in immediate attendance, Dr. Frank White, and Dr. M. W. Barr, chief physician of the institution, who visited the sick children occasionally, those in attendance upon the sick did not come in contact with other members of the household. Dr. Barr and Dr. White observed the necessary precautions in their





visits to the ward and on their return therefrom.

The attendants of the manse did not come in contact with the outer world in any sense. When the first case developed, the building was isolated; the people of the third floor where the disease originated were not allowed to communicate with the people of the second floor. In other respects, the building was used as it had always been, but, it may be repeated, was isolated from any communication with the other buildings.<sup>1</sup> As stated, cases of diphtheria continued to occur in the Manse at intervals of a few days.

At the request of Dr. Barr, conveyed through Dr. DeForest Willard, chairman of the Hospital Committee, I visited the institution on the evening of November 8, 1894. Every recognized method of precaution and prophylaxis was found in force, and the treatment of the sick children, concerning which my colleagues on the medical staff, Dr. J. Madison Taylor and Dr. D. T. Lainé, had likewise been consulted, was such as to command entire approval.

Being pressed by Dr. Barr for a possible improvement in prophylactic routine, it occurred to me that perhaps guaiacol, the most active therapeutic constituent of creosote, which I had repeatedly tested upon mucous membranes and found to be devoid of caustic properties and decidedly beneficial in the treatment of septic and ulcerative processes, might prove useful, either in destroying the germs of diphtheria or in rendering the throat an unfruitful soil for their propagation. At all events we agreed that it was worth the trial. Merck's guaiacol was obtained, as some of the other preparations found in the shops contain caustic impurities. It was to be used in full strength, or diluted one-half with glycerin or olive oil, according to the

susceptibility or tractability of the children. From the time that the applications of guaiacol were begun, but two additional cases occurred, both exceedingly mild.

I append a brief but sufficiently detailed report from Dr. White, and Dr. Barr's reply to my query of: "*Post hoc or propter hoc?*"

#### REPORT OF DR. FRANK WHITE.

During our recent epidemic in the Manse the prophylaxis was as follows: Careful attention to cleanliness, maintenance of even temperature and freely changing the air of day rooms.

The dormitories and bedding were always carefully aired daily, and the strictest watch kept over bedding. The children on the third floor (where the trouble originated) were carefully examined twice daily (morning and evening), and throats were all painted with a solution of hydrogen dioxid. This treatment was being carried on, with a case developing now and then, when, at the suggestion of our Dr. Cohen, guaiacol was substituted.

The first application of guaiacol was made to 64 children on November 9, 1894. A small wad of cotton was wrapped on a probe, then dipped in a 50 per cent. solution of guaiacol and the drug painted on thoroughly over the surface of tonsils and posterior wall of pharynx. The closest attention was given to small cup-shaped cavities and sinuosities of tonsils, as it was noticed that all cases that developed were in children that had had, at some previous time, inflammatory trouble in this locality. The cases, the next day, on going over the throats, presented an appearance of general hyperemia—and brighter children complained of an astringent sensation and a feeling of soreness of the upper pharyngeal tract.

The throats were painted twice a week, and no suspicious case was noticed until November 27, 1894, when a boy on the second

<sup>1</sup> The quarantine of this building was not removed until January 1, 1895, after very thorough cleansing, disinfection and fumigation.



floor was found with a small amount of white membrane on the right tonsil. This boy was immediately isolated, and then all children on this floor were again painted with the guaiacol solution.

No new case developed; but a case was found on the third floor the next day, November 28th, this being the last case to develop.

The children were all painted twice a week until December 20th, when the use of guaiacol was discontinued.

ELWYN, DELAWARE CO., PA.,

January 2, 1895.

LETTER FROM DR. BARR.

ELWYN, DELAWARE CO., PA.,

January 5, 1895.

MY DEAR DR. COHEN:—The cases of diphtheria which developed November 27th and 28th, were exceedingly light, in fact the lightest we have had, as one boy had but a slight deposit on his right tonsil. I am sure the disease was modified very much by the treatment with guaiacol. \* \* \* I shall unhesitatingly use it in the future, if there is any necessity, as I think it very valuable as a prophylactic. \* \* \*

Yours very truly,

MARTIN W. BARR.

In future resort to this method of prophylaxis, I should be inclined to make the applications more frequently, perhaps every other day, or even daily. Admitting the difficulty

of estimating the true value of any prophylactic expedient from a limited experience, I am anxious to have guaiacol thoroughly tested as a prophylactic and also as a curative agent against diphtheria, and shall be glad to hear from those who make use of it, either in private or hospital practice.

In conclusion, a word as to the immediate effect of the applications is necessary. Diluted, or undiluted, guaiacol, applied to the throat, stings, burns, and in some instances produces a sensation of strangling. This, however, even at its worst, passes off in a minute or so, sometimes in less than a minute. Previous application of cocain—say, 2 or 4 per cent. solution—diminishes the unpleasant effect of the guaiacol. If a solution of menthol (5 per cent.) in glycerin or olive oil is used to dilute the guaiacol, the painfulness of the application is much lessened. Liquid petrolatum may also be used; but the solution is not perfect, and must be shaken up, giving some uncertainty of result. The application should be made quickly, and with firm but gentle pressure. The formula given below is that which I am now using, both in attempted prophylaxis and in the local treatment of diphtheria:

Guaiacol (chemically pure) . . . 50 parts (f  $\frac{3}{4}$  ss.).  
Menthol . . . . . 5 parts (gr. xxiv).  
Pure olive oil . . . . . 50 parts (f  $\frac{3}{4}$  ss.).

To be applied with cotton swab, once daily (in prophylaxis), twice daily (in treatment), or as needed.

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